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translate the end effector, and a vertical rotary actuator to rotate the end effector about a vertical axis. --

## REMARKS

This response is intended to address in a full and complete manner the Office Action dated April 11, 2000. Claims 1-28, 30-33, 35-45 and 47-58 are pending in the application. Independent claims 1, 15, 28, 38, 40, 42-45, 47 and 58 stand rejected under 35 U.S.C. § 103 (a). Dependent claims 2-14, 16-27, 30-33, 35-37, 39, 41 and 48-57 stand objected to, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Applicants will submit revised drawings per the Notice of Draftperson's Review under separate cover.

The Applicants have amended the following independent claims with respective dependent claims to more clearly recite the claimed subject matter: claim 1 by incorporating claim 3, claim 15 by incorporating claim 16, claim 28 by incorporating claim 30, claim 38 by incorporating claim 39, claim 40 by incorporating claim 41 and claim 47 by incorporating claim 53. The dependent claims 3, 16, 30, 39, 41 and 53 have been amended to further define the invention. Therefore, it is believed that the rejections of the above independent claims (claims 1, 15, 28, 38, 40, and 47) have been obviated and the Examiner is respectfully requested to withdraw such rejections.

Applicants further present new claims 59-86 which correspond to allowable dependent claims 2, 7-14, 18-27, 33, 35-36, 48-52, and 57, respectively. Allowance of the claims is respectfully requested.

Claims 42-44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Fairbairn '121*. The Examiner indicates that *Fairbairn* discloses an apparatus for performing thin film processing comprising a substrate removal and delivery system and a first and second load lock chamber with at least one processing chamber.

The Applicants respectfully traverse the rejection. *Fairbairn* teaches a cluster tool arrangement having a load lock chamber coupled to a transfer chamber and transfer robot where the transfer robot is central to a plurality of processing chambers and transfers substrates directly

to the processing chambers. *Fairbairn* does not teach, show, or suggest an apparatus for performing thin film processing, comprising a substrate delivery and removal system and a substrate exchange apparatus by which the substrates can be retrieved from the substrate delivery and removal system, introduced into the interior of the plurality of processing islands, extracted from the plurality of processing islands, and returned to the delivery and removal system, as recited in claims 42-44. Therefore, the Examiner is respectfully requested to withdraw the rejection.

Claim 45 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kroeker* '269. The Examiner indicates that *Kroeker* discloses an apparatus having a work flow path and a substrate transfer mechanism arranged to remove substrates between two adjacent chambers separated by a second pitch on a conveyor (column 3, lines 15-29).

The Applicant respectfully traverses the rejection. *Kroeker* teaches a cluster tool arrangement with a load lock chamber having two loading regions in communication with a central region in the load lock chamber. The central load lock region communicates with a central buffer chamber having a transfer robot therein. The buffer chamber communicates with a plurality of processing chambers coupled directly to the buffer chamber where the transfer robot accesses each processing chamber. *Kroeker* does not teach, show, or suggest a processing chamber being separated from a substrate transfer mechanism by a load lock chamber, as recited in claim 45. Further, *Kroeker* does not teach, show, or suggest a conveyor and thus, does not teach, show, or suggest a conveyor having a first pitch substantially equal to or an integer multiple of a second pitch between the load lock chamber and the processing chamber, as recited in claim 45. Therefore, the Examiner is respectfully requested to withdraw the rejection.

Claim 58 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kawamura* '828. The Examiner indicates that *Kawamura* discloses an apparatus for performing a process on a substrate, a means for storing a substrate at a first processing path, a plurality of process chambers located adjacent to the processing path between a first and second processing path, and a means for retrieving and delivering a substrate to an exchange position associated with a selected process chamber.

The Applicants respectfully traverse the rejection. *Kawamura* discloses a system having a plurality of process chambers connected to each other around a buffer chamber. The buffer

chamber comprises a carrying means to transfer a wafer between the buffer chamber and the plurality of process chambers. *Kawamura* does not teach, show, or suggest an apparatus to perform a process on a substrate, comprising a substrate processing path having a first end and a second end; a means for storing a substrate at the first end of the substrate processing path; a plurality of process chambers located adjacent to the processing path between the first end and the second end of the processing path; at least one load lock chamber associated with the process chambers; a means movable along the processing path for retrieving a substrate from the means for storing and delivering the substrate to an exchange position in the load lock chamber associated with a selected number of the process chambers from where it can be introduced into the selected number of the process chambers, wherein the substrate being moved into the exchange position in a direction that is substantially perpendicular to the processing path, as recited in claim 58. Therefore, the Examiner is respectfully requested to withdraw the rejection.

In conclusion, the references cited by the Examiner do not teach, show, or suggest the subject matter of the rejected claims. Therefore, it is believed that the rejections made by the Examiner have been obviated, and Applicant respectfully requests that the same be withdrawn. Allowance of the pending claims is therefore respectfully requested.

Respectfully submitted,

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